Matrix V-Series
VSER-RPU-SYS
Redundant Power Supply

Hardware Installation Guide

ELECTRICAL HAZARD: Only qualified personnel should perform installation procedures.

NOTICE

Regulatory Compliance Information

Federal Communications Commission (FCC) Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Notice

This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

VCCI NOTICE

This is a class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

　　この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Class A ITE Notice

WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

BSMI EMC Statement — Taiwan

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Safety Compliance

Please read the following safety information carefully before installing the RPS:

WARNING: Installation and removal of the unit must be carried out by qualified personnel only.

- The unit must be connected to an earthed (grounded) outlet to comply with international safety standards.
- Do not connect the unit to an A.C. outlet (power supply) without an earth (ground) connection.
- The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN 60320/IEC 320 appliance inlet.
- The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.
- This unit operates under SELV (Safety Extra Low Voltage) conditions according to IEC 60950. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.

France and Peru only
This unit cannot be powered from IT[†] supplies. If your supplies are of IT type, this unit must be powered by 230 V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labelled Neutral, connected directly to earth (ground).

[†] Impédance à la terre

Power Cord Set	
U.S.A. and Canada	The cord set must be UL-approved and CSA certified.
	The minimum specifications for the flexible cord are: - No. 18 AWG - not longer than 2 meters, or 16 AWG. - Type SV or SJ - 3-conductor
	The cord set must have a rated current capacity of at least 10 A
	The attachment plug must be an earth-grounding type with NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
Denmark	The supply plug must comply with Section 107-2-D1, Standard DK2-1a or DK2-5a.
Switzerland	The supply plug must comply with SEV/ASE 1011.
U.K.	The supply plug must comply with BS1363 (3-pin 13-amp) and be fitted with a 5 A fuse which complies with BS1362.
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
Europe	The supply plug must comply with CEE7/7 ("SCHUKO").
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
	IEC-320 receptacle.

Veuillez lire à fond l'information de la sécurité suivante avant d'installer le RPS:

AVERTISSEMENT: L'installation et la dépose de ce groupe doivent être confiés à un personnel qualifié.

• Ne branchez pas votre appareil sur une prise secteur (alimentation électrique) lorsqu'il n'y a pas de connexion de mise à la terre (mise à la masse).

• Vous devez raccorder ce groupe à une sortie mise à la terre (mise à la masse) afin de respecter les normes internationales de sécurité.

• Le coupleur d'appareil (le connecteur du groupe et non pas la prise murale) doit respecter une configuration qui permet un branchement sur une entrée d'appareil EN 60320/IEC 320.

• La prise secteur doit se trouver à proximité de l'appareil et son accès doit être facile. Vous ne pouvez mettre l'appareil hors circuit qu'en débranchant son cordon électrique au niveau de cette prise.

• L'appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme IEC 60950. Ces conditions ne sont maintenues que si l'équipement auquel il est raccordé fonctionne dans les mêmes conditions.

France et Pérou uniquement:

Ce groupe ne peut pas être alimenté par un dispositif à impédance à la terre. Si vos alimentations sont du type impédance à la terre, ce groupe doit être alimenté par une tension de 230 V (2 P+T) par le biais d'un transformateur d'isolement à rapport 1:1, avec un point secondaire de connexion portant l'appellation Neutre et avec raccordement direct à la terre (masse).

Cordon électrique - Il doit être agréé dans le pays d'utilisation	
Etats-Unis et Canada:	Le cordon doit avoir reçu l'homologation des UL et un certificat de la CSA.
	Les spe'cifications minimales pour la corde flexible sont AWG No. 18, ou AWG No. 16 pour une longueur infe'rieure a` 2 me'tres: - type SV ou SJ - 3 conducteurs
	Le cordon doit être en mesure d'acheminer un courant nominal d'au moins 10 A.
	La prise femelle de branchement doit être du type à mise à la terre (mise à la masse) et respecter la configuration NEMA 5-15P (15 A, 125 V) ou NEMA 6-15P (15 A, 250 V).
Danemark:	La prise mâle d'alimentation doit respecter la section 107-2 D1 de la norme DK2 1a ou DK2 5a.
Suisse:	La prise mâle d'alimentation doit respecter la norme SEV/ASE 1011.
Europe	La prise secteur doit être conforme aux normes CEE 7/7 ("SCHUKO")
	LE cordon secteur doit porter la mention <HAR> ou <BASEC> et doit être de type HO3VVF3GO.75 (minimum).

Bitte unbedingt vor dem Einbauen des Switches die folgenden Sicherheitsanweisungen durchlesen:

WARNUNG: Die Installation und der Ausbau des Geräts darf nur durch Fachpersonal erfolgen.

• Das Gerät sollte nicht an eine ungeerdete Wechselstromsteckdose angeschlossen werden.
• Das Gerät muß an eine geerdete Steckdose angeschlossen werden, welche die internationalen Sicherheitsnormen erfüllt.
• Der Gerätestecker (der Anschluß an das Gerät, nicht der Wandsteckdosenstecker) muß einen gemäß EN 60320/IEC 320 konfigurierten Geräteeingang haben.
• Die Netzsteckdose muß in der Nähe des Geräts und leicht zugänglich sein. Die Stromversorgung des Geräts kann nur durch Herausziehen des Gerätenetzkabels aus der Netzsteckdose unterbrochen werden.
• Der Betrieb dieses Geräts erfolgt unter den SELV-Bedingungen (Sicherheitskleinstspannung) gemäß IEC 60950. Diese Bedingungen sind nur gegeben, wenn auch die an das Gerät angeschlossenen Geräte unter SELV-Bedingungen betrieben werden.

Stromkabel. Dies muss von dem Land, in dem es benutzt wird geprüft werden:	
Schweiz	Dieser Stromstecker muß die SEV/ASE 1011Bestimmungen einhalten.
Europe	Das Netzkabel muß vom Typ HO3VVF3GO.75 (Mindestanforderung) sein und die Aufschrift <HAR> oder <BASEC> tragen.
	Der Netzstecker muß die Norm CEE 7/7 erfüllen ("SCHUKO").

Declaration of Conformity

Application of Council Directive(s):	**89/336/EEC** **73/23/EEC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Address:	**Enterasys Networks, Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 89/336/EEC** **EC Directive 73/23/EEC** **EN 55022** **EN 55024** **EN 60950**
Equipment Type/Environment:	**Networking Equipment, for use in** **a Commercial or Light Industrial** **Environment.**

Enterasys Networks, Inc. declares that the equipment packaged
with this notice conforms to the above directives.

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Chapter 1:
About the Redundant Power Supply

Overview

Note: The VSER-RPU-SYS is compatible with V2H124-24 and V2H124-24T only.

This VSER-RPU-SYS External Redundant Power Supply (RPS) can supply 600 Watts of backup power to four switching devices in the event of an AC loss or failure of an internal power supply.

The system operates in a parallel capacity with a switch's internal power supply. If a switch's internal power supply fails, the RPS will support the full load of the switch without affecting network operation.

Features and Benefits

- Supports four switching devices with 12V DC output
- Easy management LEDs located on the front panel
- AC line cord can draw power from a different supply circuit
- DC line cord provides backup power to the attached device
- The power supply will operate under a no-load condition.

Front and Rear Panels

Four power indicators (LEDs) and one fan indicator are located on the RPS's front panel. The AC supply and DC backup receptacles are located on the RPS's rear panel.

Figure 1-1. Front and Rear Panels
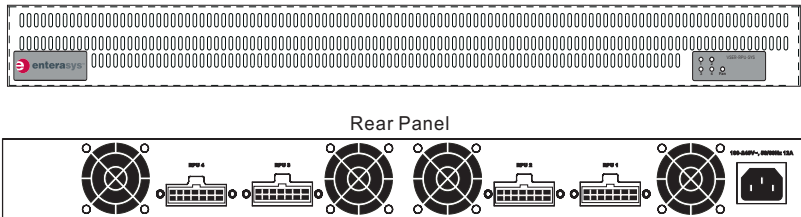
LEDs

The following diagram and table describe the functions of the LEDs on the Front Panel.
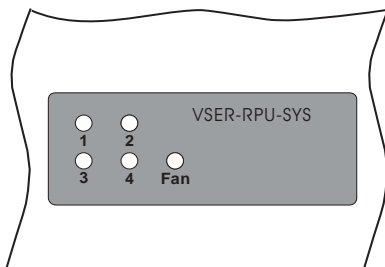
Figure 1-2. LEDs

Table 1-1. Port Status LEDs		
LED	**Condition**	**Status**
RPS 1, 2, 3, 4	On Green	Power is being supplied to the RPS, the unit is functioning normally, and the RPS port is connected to a switch.
	Flashing Green	Power is being supplied to the RPS, the unit is functioning normally, but no switch is connected to the RPS port.
	Off	Power is off, or a failure has occurred.
Fan	On Green	The fans are functioning normally.
	Flashing Red	One or more fans have failed.
	Off	The unit is not connected to an AC power source.

Chapter 2:
Installing the Redundant Power Supply

Installation

Note: The VSER-RPU-SYS is compatible with V2H124-24 and V2H124-24T only.

The RPS may be placed on a desktop or mounted in a rack.

Caution: DO NOT place the RPS on the floor as the case is not waterproof. It is recommended that this RPS be installed in a network equipment rack.

Selecting a Site

RPS units can be mounted in a standard 19-inch equipment rack or on a flat surface. Be sure to follow the guidelines below when choosing a location.

- The site should:
  - be at the center of all the devices you want to link and near a power outlet.
  - be able to maintain its temperature within 0 to 40 °C (32 to 104 °F) and its humidity within 5% to 95%, non-condensing
  - provide adequate space (approximately two inches) on all sides for proper air flow
  - be accessible for installing, cabling and maintaining the devices
  - allow the status LEDs to be clearly visible
  - Make sure that a separate grounded power outlet that provides 100 to 240 VAC, 50-60 Hz, is within 2.44 m (8 feet) of each device and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

Equipment Checklist

After unpacking the RPS, check the contents to be sure you have received all the components. Then, before beginning the installation, be sure you have all other necessary installation equipment.

Package Contents

- Redundant Power Supply Unit
- One AC Supply Power Cord — US, Continental Europe or UK
- Four DC Backup Power Cords with IEC connectors on both ends (length 152 cm [60 in.] each)
- Rack Mounting Kit containing brackets and screws
- Adhesive feet
- This Manual
- User Agreement Envelope
- Registration Card

GettingHelp

For additional support related to the RPS or this document, contact Enterasys Networks using one of the following methods:

Web	http://www.enterasys.com/support
Phone	603-332-9400 1-800-872-8440 (toll-free in U.S. and Canada)
	For the Enterasys Networks Support toll-free number in your country: **http://www.enterasys.com/support/gtac-all.html**
Internet mail	**support@enterasys.com**
	To expedite your message, please type **[eth]** in the subject line.

To send comments or suggestions concerning this document to the Technical Writing Department: **techwriting@**enterasys.com

To expedite your message, please type **[techwriting]** in the subject line, and include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number

- A description of the failure

- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)

- The serial and revision numbers of all involved Enterasys Networks products in the network

- A description of your network environment (layout, cable type, etc.)

- Network load and frame size at the time of trouble (if known)

- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Optional Rack-Mounting Equipment

If you plan to rack-mount the RPS, be sure to have the following equipment available:

- Four mounting screws for each device you plan to install in a rack—these are not included
- A screwdriver (Phillips or flathead, depending on the type of screws used)

Mounting

RPS units can be mounted in a standard 19-inch equipment rack or on a desktop or shelf. Mounting instructions for each type of site follow.

Rack Mounting

Before rack mounting the unit, pay particular attention to the following factors:

- Temperature: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range.
- Mechanical Loading: Do not place any equipment on top of a rack-mounted unit.
- Circuit Overloading: Be sure that the supply circuit to the rack assembly is not overloaded.
- Grounding: Rack-mounted equipment should be properly grounded. Particular attention should be given to supply connections other than direct connections to the mains.
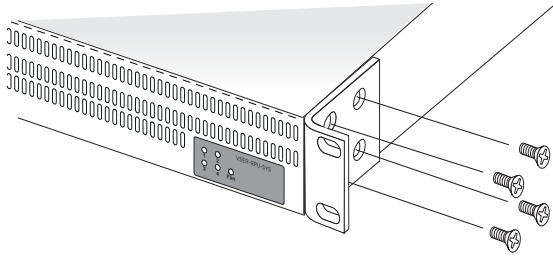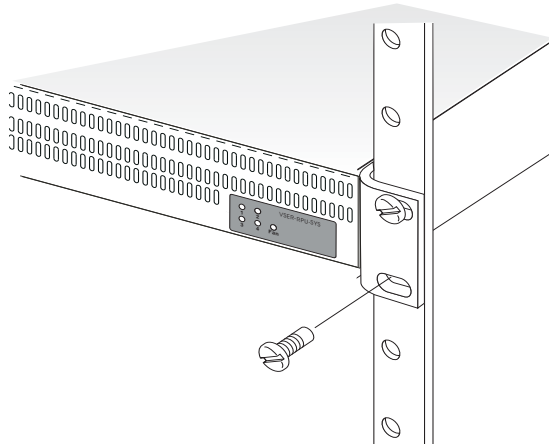
To rack-mount devices:

1. Attach the brackets to the device using the screws provided in the Rack Mounting Kit.

Figure 2-1. Attaching the Brackets

2. Mount the device in the rack, using four rack-mounting screws (not provided).
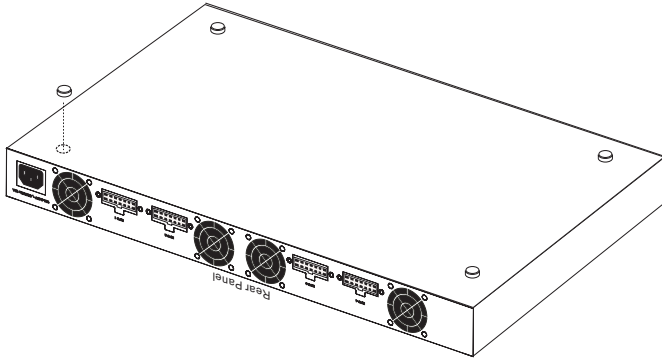
Figure 2-2. Installing the RPS in a Rack

Desktop or Shelf Mounting

1. Attach the four adhesive feet to the bottom of the first RPS unit.

Figure 2-3. Attaching the Adhesive Feet

2. Set the device on a flat surface near an AC power source, making sure there are at least two inches of space on all sides for proper air flow.
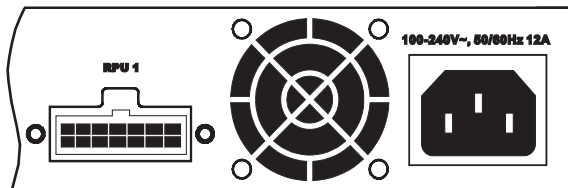
Connecting Switches to the RPS

Caution: DO NOT connect the RPS to an AC power source until DC power cords have been connected to the supported switches.

To connect switches to the RPS, refer to Figure 2-4 and Figure 2-5 and proceed as follows:

1. Power up the switch by connecting one end of the AC cord to the AC receptacle on the supported switch, and the other end to a grounded power outlet.

Figure 2-4. Power Receptacle

2. Connect one end of a DC cord to the redundant power receptacle on the supported switch and the other end to an available receptacle on the RPS.

3. Repeat steps 1 and 2 for connecting up to four supported switches to the RPS.

4. Power up the RPS by connecting one end of the AC cord to the AC receptacle on the RPS, and the other end to a grounded power outlet.

5. Check the LEDs on the RPS to ensure proper operation. The Fan LED and the RPS LED for connected switches should light up. If the LEDs indicate otherwise, see "Troubleshooting" on page A-1 for more information.

Figure 2-5. Connecting Several Switches to an RPS
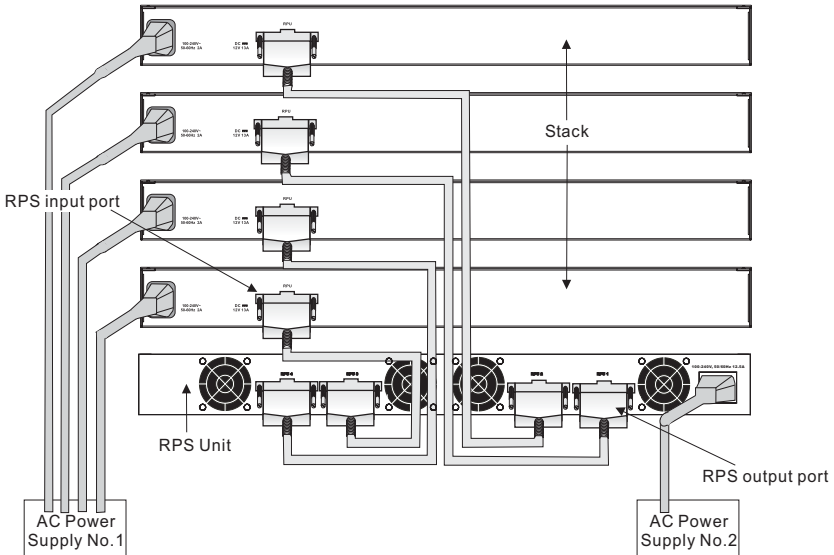
Note: For International use, you may need to change the AC line cord. You must use a line cord set that has been approved for the receptacle type in your country.

Appendix A: Troubleshooting

Diagnosing RPS Indicators

Table A-1. Troubleshooting Chart	
Symptom	**Action**
LEDs are Off	• Internal power supply is disconnected. • Check connections between the RPS, the power cord, and the wall outlet. • Contact Technical Support.
Fan LED is Flashing Red	• One or more fans are malfunctioning. Have the unit replaced as soon as possible.

Power and Cooling Problems

If the fan LED does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or internal power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet, and verify that the fans on the unit are unobstructed and running prior to shutdown. If you still cannot isolate the problem, then the internal power supply may be defective. In this case, contact your distributor for assistance.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (such as the power cord or RPS cable), test them in an alternate environment where you are sure that all the other components are functioning properly.

Appendix B: Specifications

Physical Characteristics

Ports
4 RPS DC power outlets

LEDs
Ports 1 to 4, and fan status LEDs.

Weight
5 kg (27.6 lbs)

Size
44.0 x 28.4 x 4.3 cm (17.34 x 11.19 x 1.69 in.)

Temperature
Operating: 0 to 40 °C (32 to 104°F)

Storage: -40 to 70 °C (-40 to 158 °F)

Humidity
Operating: 5% to 95%

AC Input
100 to 240 V, 50 to 60 Hz

EIA Ratings
115V/10A
230V/10A

Power Consumption
264 Watts maximum
900.5 BTU

DC Power Cable Connector
14-pin plastic cable

Power Supply

Internal, auto-ranging: 100 to 240 VAC, 50 to 60 Hz
Output 12 VDC
Current: 0 A (minimum), 13 A (maximum)
Line regulation: +/- 1%
Load regulation: +/- 10%
Overshoot and undershoot: 5%

Maximum Current

10 A @ 110 VAC
5 A @ 230 VAC

Fan

Voltage +12 VDC
Operating voltage range: 7 V to 13.8 V
Speed: 8200 RPM
Air delivery: 9.43 CFM
Noise: 30.5 dB

Compliances

Product Safety

UL 60950
CSA C22.2 No. 60950
73/23/EEC
EN 60950
IEC 60950

Electromagnetic Compatibility (EMC)

47 CFR Parts 2 and 15
CSA C108.8
89/336/EEC
EN 55022
EN 61000-3-2
EN 61000-3-3
EN 55024
AS/NZS CISPR 22
VCCI V-3

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